Limestone Mine Plan
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Overview

Cotter Corporation proposes to conduct a small scale shallow open pit limestone mining operation. The limestone deposit consists of the upper unit of the Pennsylvanian aged Hermosa Formation. The land to be affected is Utah State land which is controlled by a State Lease. Accordingly, the Division of State Lands and Forestry has been given a copy of this proposed mine plan. The proposed mine site lies at an elevation ranging from 6650 to 6740 feet sloping from 8-16% to the west toward an unnamed intermittent tributary of Big Indian Wash. The surface is 20-30% bare limestone and 70-80% is covered with a very thin layer (usually less than 6") of soil. The mine area is vegetated at a moderate density by mature piñon and juniper trees with sparse small shrubs and grass understory. The proposed ore storage area is flatter and has somewhat thicker soil supporting sage bush, grasses and a few small trees.
Limestone is the only mineral product to be mined. Any of the sparse overburden to be stripped will be stockpiled and used later for reclamation purposes. The only waste rock types that will be generated consist of the possible fine rejects containing material from the very thin interbedded friable quartz sandstone lenses generated by the crushing and screening operation (described later) and minor amounts of coarser material which are rejected due to quality (excessively weathered material, silica nodules, etc.) Much of the fine rejects will be used to surface the access road and storage area and potentially sold elsewhere for road base. A market for the coarse rejects, such as riprap use, will also be sought in order to minimize the amount of waste rock left at the mine site. Annual production is anticipated to be 20,000 tons of limestone necessitating mining approximately 25,000 tons of rock per year.

Mine Plan

The anticipated sequence for the mining operation will be as follows: Trees and brush will be stripped, windrowed or piled with a bulldozer. The thin, sporadic soil will be stripped and stockpiled. Blast holes will be drilled with an air track drill. Water mist may be used to control dust during drilling. Explosives will be loaded and the holes shot approximately once per month. In accordance with MSHA regulations, any possible area of approach will be closed by barriers or fences and be guarded during blasting. These fences and barriers will also hinder access to the highwall of the pit. It should be noted that the pit and highwalls are not expected to be more than 15 feet deep.

The broken rock will be mucked and trammed to the crusher by means of a rubber-tired loader. Rock will be crushed and screened to a product size of minus 8". This will require only a primary crushing operation employing a portable jaw crusher. Water spray devices will be used to minimize dust emissions during crushing. The particle size of the stockpiled material and any undersize reject pile should be large enough to preclude dust emissions due to wind. The undersize reject pile will be sprayed with water as necessary to control fugitive dust. A notice of intent for an air emission permit is being sent to the Utah Division of Air Quality.

The crushed product will be transported by conveyor or loader to the stockpile area. During the construction phase, this area will be cleared of brush and soil. This area will then be blasted as the initial part of the pit to form a level base for stockpiling. A berm of native soil material will be constructed around this area as needed to prevent any mined material from washing down slope into the nearby drainage. The storage pad will be of sufficient size (0.67 acre) to allow for truck turning and loading. The pit will then advance to the southeast. The crushing and stockpile areas will also move southeastward periodically as needed.

Access

Access to the mine site will be off San Juan county road #370 (Lisbon Valley Road) approximately 1.3 miles southeast of the intersection with San Juan county road #306 (Big Indian Valley Road.) Approximately 460 feet of new access road 20 feet wide will be constructed in accordance with the encroachment requirements of the San Juan county road department engineer. A culvert of appropriate size will be installed to cross the drainage on the south side of County road #370. Construction of the remaining 425 feet of access road to the stockpile and mine area (885 ft. total access road) will consist of upgrading an existing old seismic exploration road. When enough mined material has been produced, it will be used as a base for the access road which will then be surfaced with undersize rejects prior to being subjected to heavy truck traffic. A dust suppressant will be applied as necessary to minimize the suspension of dust. The entire length of access road will be located on the Utah State leased land. As a security measure, a gate will be installed on the north side of the gully in order to deter use of the access road by unauthorized persons.

The acreage to be disturbed by the entire operation is estimated to be:

A) Access road,
   1) new - 0.21 acre,

2) upgrade of existing road - 0.20 acre,
for a total of 0.41 acre,

B) Storage Pad - 0.67
C) Topsoil Stockpile - 0.15
D) Mine area and area cleared prior to mining - 3.60 acre.

Total number of acres to be disturbed - 4.83 acre.

Storm Water Control

During mining operations, the pit and crushing area will remain a sufficient distance east of the drainage to generally preclude the potential for sediment to enter surface waters of the state. Also, since the mining operation will be near the crest of the ridge, very little storm water runoff is anticipated to enter and subsequently exit the mine area. If needed, additional berms or a silt fence will be constructed around the crushing area to minimize sedimentation from this area leaving the site and reaching the nearby drainage. A notice of intent for a storm water permit is being filed with the Utah Division of Water Quality.

All mine-related trash will be disposed of on-site or removed from the property by the completion of the operation. In addition, activities will be conducted so as not to present fire hazards. No buildings will be constructed, as presently planned. Portable toilet facilities will be provided during periods of operation.

Exploration Drilling

No exploration drill holes (core or rotary) are anticipated at this time. However, if any drilling is deemed necessary at a later date, proper notifications and abandonment procedures, as required by Utah regulations, will be followed.

Site Access Controls and Other Lessee Notifications

As previously mentioned, barriers, such as windrows of stripped trees, fences, gate and signs will be used to deter entry of the mining area by the public and livestock during mining and later reclamation as necessary. The other lease holders of this parcel of State Land are being notified of Cotter's intent and application for a Small Mining Permit. These other lessees (Paul D. Redd of Monticello, Utah - Grazing Permit and Union Oil of California in Houston, Texas - Oil, Gas and Hydrocarbons lease) will be allowed access to the mining area if needed. None of the fences will be constructed in such a manner as to deny livestock access to

existing watering places. There will be no other disturbance to any of the other surface resources on this State lease outside the 4.83 acres covered by this permit application.

Water Use & Hydrologic Regime

All water to be used in this operation is expected to be purchased from Redd Ranches in La Sal, Utah and hauled to the mine site. No ground water is expected to be encountered in the mining operation. Since the mine site is near the crest of the ridge, there is insufficient recharge area to contribute ground water to the area, especially at the shallow pit depths of 15 feet or less. Furthermore, the limestone is impermeable, so recharge would only be through joints and fractures. The underlying sandstone is poorly cemented and very permeable, thereby allowing infiltration, so no seeps are anticipated even at the base of the limestone bed.

Reclamation Plan

Reclamation will be done concurrently with mining as much as possible once the pit is large enough. This is not expected to happen until the third year of operation. Before any portion of the pit is abandoned, the highwall will be cut or backfilled with course reject material to a slope of less than 45°. The available top soil will be spread and scarified, then seeded with the following seed mixture chosen from a list of species suggested by the U.S. Soil Conservation Service offices in Monticello, Utah and Norwood, Colorado.

Grasses:	**lbs/acre (drilled)**	**lbs/acre (broadcast)**
Crested Wheat Grass (Hycrest)	3	6
Russian Wild Rye (Bozoisky)	3	6
Pubescent Wheat Grass (Luna)	4.2	8.4
Total Grasses	10.2	20.4
Forbs:		
Alfalfa (Spreader 2)	0.8	1.6
Shrubs:		
4-Wing Salt Bush (Rincon)	0.5	1.0
Total	**11.5 lb/acre**	**23.0 lb/acre**

A few of the original trees will be scattered across any reclaimed areas.

After mining operations cease and it is determined the access road and stockpile area are no longer needed (that is if the Utah Division of State Lands and Forestry does not want the road left in place) they will be reclaimed. The road base material will be returned to the pit and the entire roadway length and stockpile area scarified and seeded.

Also, any remaining reject material will be disposed of in the pit. The culvert will be removed and the access returned to its original condition. Berms and water bars will be placed where needed to prevent erosion during re-vegetation. This will also prevent sediment delivery to the nearby drainage. The land will thus be returned to the pre-mining use of livestock and wildlife grazing.

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